UNITED STATES PATENT AND TRADEMARK OFFICE

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ART UNIT	PAPER NUMBER
2116	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
	10/005,936	MASUYAMA ET AL.
Office Action Summary	Examiner	Art Unit	
	Tse Chen	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A-SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _10 August 2007_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-25_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-25_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-9, 14-16, 19-23, 25 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Smith, U.S. Publication 2002/0198608, in view of Ando, Japanese

Publication 2000-102166.

3.   In re claim 1, Smith discloses a computer system [fig.2; multiple processor

combination 100] comprising:

- A power supply [inherently to supply operational voltage] [0025].

- At least two server modules [server blades 102-1 and 102-n; fig.2].

- A midplane [pci bus 110] comprising:

   o At least two connectors [112] operable to receive the at least two server

      modules and to provide a unique address for each server module, each

      connector having a unique predetermined address independent of the

      server modules [fig.1; 0025-0026; each server module connects to the

      midplane through a respective connector].

   o An address module [system server blade 102-0] operable to obtain the

      unique addresses of the connectors from the midplane and to calculate a

      start-up time [operable broadly interpreted as optionally capable; address

module, responsible for managing the configuration of the other server modules, is capable of calculating a start-up time] for a first server module [e.g., 102-1] [0029; determines unique address of each connector based on GA pins].

4.   Smith did not discuss details of power management for the system.

5.   Ando discloses a computer system [electronic equipment] comprising:

- A start-up time [e.g., deltaT; time shifted] for a first server module [103; card analogous to server for processing communication signals] based on the unique address [e.g., slot address 502] for the connector [slot] in which the first server module is received and a multiplication factor [time constant] associated with a duration of an inrush load of at least one of the server modules [abstract, solution; 0012, 0018, 0022, 0029, 0033, 0035; different pattern edging for each unique address connector with different address signals].

- Wherein the system is operable to couple the power supply [via 406, 407] to the first server module based on the start-up time [0030-31].

6.   It would have been obvious to one of ordinary skill in the art, having the teachings of Smith and Ando before him at the time the invention was made, to modify the system taught by Smith to include the teachings of Ando, in order to obtain the computer system comprising an address module operable to obtain the unique addresses from the midplane and to calculate a start-up time for a first server module based on the unique address for the first server module and a multiplication factor associated with a duration of an inrush load of at least one of the server modules; wherein the system is operable to couple the power supply to the first server module based on the start-up time. One of ordinary skill

in the art would have been motivated to make such a combination as it provides a way to manage the initial inrush current at startup to limit the power supply means [Ando: abstract].

7.   As to claim 2, Smith discloses, wherein the server modules comprise blade servers [incorporate multiple 102 blade servers as one server module as it is well known in the art to incorporate a plurality of servers into one module].

8.   As to claim 3, Examiner had taken Official Notice that brick and blade servers are known equivalents as prior art. One of ordinary skill in the art would have chosen either brick or blade server based on the configuration requirements of the system. Accordingly, it would have been obvious to replace blade servers with brick servers to be sequentially powered up in an autonomous fashion.

9.   As to claim 4, Smith discloses, wherein the midplane comprises a circuit board including the at least two connectors [multiple compact pci connectors for multiple modules] coupled to the midplane and two or more resistors [e.g., pull-up resistors associated with GA-pins] coupled to the midplane [0025]. Regarding the resistors, the Examiner has taken Official Notice that it is prior art to use pull-up resistors to signify a certain bit of information. One of ordinary skill in the art would have been motivated to make such a combination in order to provide status information in an electrical interconnection.

10.   As to claim 5, Smith discloses, wherein the connectors [multiple compact pci connectors for multiple modules] are operable to provide an interface between the server modules and the midplane [0025-26].

11.   As to claim 6, Smith discloses, wherein each connector [compact pci connector 112] is operable to interface with one server module [fig.1; 0025].

12.   As to claim 7, Smith discloses, wherein the midplane provides a unique address to each server module through resistor strapping the one or more resistors [0025].

13.   As to claim 8, Ando discloses, wherein the midplane is further operable to provide an interface [301] between the server modules and the power supply [0024].

14.   As to claims 9, Ando discloses, wherein the power supply is operable to provide power to each server module upon expiration of the start-up time [e.g., deltaT] for each server module [0022].

15.   In re claims 14 and 23, Smith discloses a computer system [fig.2; multiple processor combination 100] and associated method comprising:

- Two or more server modules operable to process data [server blades 102-1 and 102-n; fig.2].

- One or more midplanes [pci bus 110] associated with the server modules, the midplanes including a plurality of connectors [112; multiple compact pci connectors for multiple modules], each connector having a unique predetermined address independent of the server modules [fig.1; e.g., connector 112 separate from server module 102], each connector operable to interface with one of the server modules and provides a unique address for that server module based on the unique address of the connector receiving that server module [0025-0026; each server module connects to the midplane through a respective connector].

- One or more address modules [system server blade 102-0] associated with the server modules, the address modules operable to obtain the unique address from

the connectors for each server module and to calculate a start-up time for each server module [operable broadly interpreted as optionally capable; address module, responsible for managing the configuration of the other server modules, is capable of calculating a start-up time] [0029; determines unique address of each connector based on GA pins].

- At least one address module [system server blade 102-0] associated with the at least two server modules, the address module operable to obtain the unique address from the midplane for each server module [0029; determines unique address of each server module based on GA pins].

- One or more power supplies associated with the one or more midplanes, the power supplies operable to provide power to start up the server modules [inherently to supply operational power] [0025].

- One or more chassis [system cage] operable to house the server modules, the midplanes, and the power supply [fig.2; 0025; operable broadly interpreted as optionally capable; system cage capable of housing various objects without any particularly defined holding structure].

16.   Smith did not discuss details of power management for the system.

17.   Ando discloses a computer system [electronic equipment] comprising:

- A start-up time [e.g., deltaT; time shifted] for a server module [103; card analogous to server for processing communication signals] based on the unique address [e.g., slot address 502] of the connector [slot] associated with each server module and at least one start-up characteristic [inrush load requirement - e.g.,

startup set longer than the lasting time of the inrush current] of the server module [abstract, solution; 0012, 0022; 0029, 0033].

- One or more power supplies [102] associated with the one or more midplanes [101], the power supplies operable to provide power to start up the server modules in a sequence determined by the start-up times [timing for supplying power to each module is shifted] for the server modules [i.e., automatically sequencing power to start up the server modules based on the start-up times for the server modules] [abstract; 0001; 0022; 0027; 0039-41].

18.   It would have been obvious to one of ordinary skill in the art, having the teachings of Smith and Ando before him at the time the invention was made, to modify the system taught by Smith to include the teachings of Ando, in order to obtain the claimed system. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to manage the initial inrush current at startup to limit the power supply means [Ando: abstract].

19.   As to claim 15, Smith discloses, wherein the server modules comprise blade servers [102].

20.   As to claim 16, Examiner had taken Official Notice that brick and blade servers are known equivalents as prior art. One of ordinary skill in the art would have chosen either brick or blade server based on the configuration requirements of the system. Accordingly, it would have been obvious to replace blade servers with brick servers to be sequentially powered up in an autonomous fashion.

21.   As to claim 19, Smith discloses, wherein the midplane comprises a circuit board including two or more connectors [multiple compact pci connectors for multiple

modules] coupled to the midplane and two or more resistors [some kind of resistors for the multiple GA pin is needed or a short may occur] coupled to the midplane [0025]. Regarding the resistors, the Examiner had taken Official Notice that it is prior art to use pull-up resistors to signify a certain bit of information. One of ordinary skill in the art would have been motivated to make such a combination in order to provide status information in an electrical interconnection.

22. As to claim 20, Smith discloses, wherein the midplane provides a unique address to each server module through resistor strapping the one or more resistors [0025].

23. As to claims 21 and 22, Ando discloses, wherein the power supply is operable to provide power to each server module upon expiration of the start-up time [e.g., deltaT] for each server module [0022].

24. As to claim 25, the Examiner had taken Official Notice that it is prior art for one or more cabinets to house one or more of the chassis in order to provide an orderly access.

25. Claims 10, 17, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Ando as applied to claims 1, 14 and 23 above, and further in view of Butka et al., U.S. Patent 6735704, hereinafter Butka.

26. Smith and Ando disclose each and every limitation of the claim as discussed above. Smith and Ando did not discuss a management controller to provide redundant operation.

27. In re claims 10 and 24, Butka discloses a system [10; fig.1] comprising a management controller [master controller 20] associated with the midplane [bus 22], the management controller operable to provide sequence redundancy by sequencing power to

the server modules if the midplane experiences a failure [col.4, ll.8-51; col.5, l.34 – col.6, l.62].

28.   It would have been obvious to one of ordinary skill in the art, having the teachings of Butka, Smith and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the redundancy teachings of Butka, in order to permit the system to continue normal operations in the event of a failure [Butka: col.1, ll.20-42]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to permit the system to continue normal operations in the event of a failure.

29.   Smith and Ando disclose each and every limitation of the claim as discussed above. Smith and Ando did not disclose explicitly a multiplication factor.

30.   In re claim 17, Butka discloses a method wherein calculating the start-up time [delay seconds] comprises obtaining a multiplication factor [power subsystem number-1] for each server module [power nodes] and calculating the start-up time using the multiplication factor [col.4, ll.8-39].

31.   It would have been obvious to one of ordinary skill in the art, having the teachings of Butka, Smith and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the multiplication factor teachings of Butka, in order to avoid simultaneous power supplies [Butka: col.1, ll.8-39]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to avoid simultaneous power supplies.

32.   Claims 11, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Smith and Ando as applied to claims 1 and 14 above, and further in view of Fung, US

Publication 20050177755.

33.   Smith and Ando disclose each and every limitation of the claim as discussed

above. Smith and Ando did not disclose explicitly a timer.

34.   In re claim 11, Fung discloses a computer system [fig.1] comprising at least one

module [e.g., management module] associated with at least two server modules, the

module operable to perform power management functions [i.e., calculate start-up time]

for each server module [0024; 0027], wherein each address module includes a timer

[376], the address module further operable to set the timer with the start-up time and the

timer operable to count to [down from] the start-up time [0037]. Regarding the timer that

is operable to count down from the start-up time, the Examiner had taken Official Notice

that it is prior art to configure a timer to either count down or count to a known time for

timing a duration. One of ordinary skill in the art would have been motivated to make

such a combination in order to count towards a known time.

35.   In re claim 18, Fung discloses, wherein each address module includes a timer

[376], the address module further operable to set the timer with the start-up time and the

timer operable to count to [down from] the start-up time [0037]; and Ando discloses, on

the expiration of the start-up time, switching a switch [407] to an on position that allows

the server module to receive power from a power supply [0030]. Regarding the timer that

is operable to count down from the start-up time, the Examiner had taken Official Notice

that it is prior art to configure a timer to either count down or count to a known time for

timing a duration. One of ordinary skill in the art would have been motivated to make such a combination in order to count towards a known time.

36.   It would have been obvious to one of ordinary skill in the art, having the teachings of Smith, Fung and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the teachings of Fung, as timers are very well known in the art and suitable for use in the system of Smith and Ando. One of ordinary skill in the art would have been motivated to make such a combination as it provides a very well known way to provide timing of events [configurable counts more flexible and accurate than analog] and maintain performance while reducing power consumption in a server farm via global power management [Fung: 0008-11].

37.   Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith and Ando as applied to claim 1 above, and further in view of Duley, U.S. Patent 6766222.

38.   In re claim 12, Smith and Ando disclose each and every limitation of the claim as discussed above. Smith and Ando did not discuss details of the switches associated with the server modules.

39.   Duley discloses a system [power sequencing system] comprising s switch associated with each server modules [slave] and the at least one address module [master], the switch operable to accept a command from the address modules to switch between an on position and an off position [col.6, ll.18-39; col.6, l.50 – col.7, l.49].

40.   It would have been obvious to one of ordinary skill in the art, having the teachings of Duley, Smith, and Ando before him at the time the invention was made, to modify the system taught by Smith and Ando to include the switches of Duley, in order to provide

cost savings in power supplies [Duley: col.7; 1.50 – col.8, 1.4]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to provide cost savings in power supplies.

41.   As to claim 13, Ando discloses, wherein at the expiration of the start-up time a module switches a selected switch [407] to the on position allowing an associated server module [card] to receive power from the power supply [0030].

Response to Arguments

42.   Applicant's arguments filed August 10, 2007 have been fully considered but they are not persuasive.

43.   Applicant argues that "system server blade 102-0 of Smith must be powered on before it can complete any calculations". Examiner agrees as Applicant's address module also would be required to be powered on before it can complete any calculations [i.e., electronic devices inherently require power to operate].

44.   Applicant argues that Ando does not teach "a startup time for a first server modules based on the unique address…" Examiner disagrees and submits that Ando teaches a start-up time [e.g., deltaT; time shifted] for a first server module [103; card analogous to server for processing communication signals] based on the unique address [e.g., slot address 502] for the connector [slot] in which the first server module is received and a multiplication factor [time constant] associated with a duration of an inrush load of at least one of the server modules [abstract, solution; 0012, 0018, 0022, 0029, 0033, 0035]. Note that each of the server modules have different start up times because of different associated unique address signals based on the particular connector

[0012, 0029; different pattern edging for each unique address connector with different address signals].

45.   Applicant argues that one with ordinary skill in the art "would have no motivation to combine Ando with Smith". Examiner disagrees and submits that Ando, the secondary reference, would have improved Smith's teachings by managing the initial inrush current at startup to limit the power supply means [Ando: abstract].

46.   As such, Applicant's arguments are deemed not persuasive and the rejections are respectfully maintained.

Conclusion

47.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tse Chen whose telephone number is (571) 272-3672. The examiner can normally be reached on Monday - Friday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tse Chen
September 5, 2007

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TC 2100